

Multiplicación de potencias con igual base

$$\underline{a}^n \cdot \underline{a}^m = \underline{a}^{n+m}$$

Ejemplo:

$$\begin{aligned} \Rightarrow 2^3 \cdot 2^4 &= 2^{3+4} \\ &= 2^7 \\ &= 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \\ &= 4 \cdot 4 \cdot 4 \cdot 2 \\ &= 16 \cdot 8 \\ &= 128 \end{aligned}$$

$$\begin{aligned} \Rightarrow \left(\frac{1}{2}\right)^2 \cdot \left(\frac{1}{2}\right)^3 \\ &= \left(\frac{1}{2}\right)^{2+3} \\ &= \left(\frac{1}{2}\right)^5 \\ &= \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \\ &= \boxed{\frac{1}{32}} \end{aligned}$$

Corros bonitos:

Aplique propiedades de potencias y resuelva:

$$\begin{aligned} 3^3 \cdot 3^2 &= 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \\ &= 27 \cdot 9 \\ &= 243 \\ \Rightarrow 3^5 &= 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \\ &= 243 \end{aligned}$$

Aplique propiedades:

$$\begin{aligned} 2^4 \cdot 2^3 &= 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \\ &= 16 \cdot 8 \\ &= 128 \end{aligned}$$

a) 2^6

b) 2^0

c) 2^1

d) 2^7

$$\begin{aligned} 2^4 \cdot 2^3 &= 2^{4+3} \\ &= 2^7 \end{aligned}$$

$$\frac{a}{b} = a : b$$

Ejercicio:

$$\begin{aligned} \left(\frac{1}{2}\right)^3 \cdot \left(\frac{1}{2}\right)^2 &= \left(\frac{1}{2}\right)^{3+2} \\ &= \left(\frac{1}{2}\right)^5 = \left(\frac{2}{1}\right)^5 = 2 : 1 = \boxed{2} \end{aligned}$$

$$\begin{aligned} 4^{-6} \cdot 4^4 &= 4^{-6+4} \\ &= 4^{-2} \\ &= \left(\frac{1}{4}\right)^2 \\ &= \left(\frac{1}{4}\right)^2 = \frac{1}{4} \cdot \frac{1}{4} = \boxed{\frac{1}{16}} \end{aligned}$$

$$\begin{aligned} Q &= \frac{121}{2} \\ &= \frac{4}{2} \end{aligned}$$

Multiplicación de potencias con igual exponente

$$\underline{a}^n \cdot \underline{b}^n = (\underline{a} \cdot \underline{b})^n$$

Ejemplo:

$$\begin{aligned} 2^3 \cdot 3^3 &= (2 \cdot 3)^3 \\ &= 6^3 \\ &= 6 \cdot 6 \cdot 6 \\ &= 216 \end{aligned}$$

$$\begin{aligned} \Rightarrow \left(\frac{1}{3}\right)^{-2} \cdot \left(\frac{1}{6}\right)^{-2} &= \left(\frac{1}{3 \cdot 6}\right)^{-2} \\ &= \left(\frac{1}{18}\right)^{-2} \\ &= \left(\frac{18}{1}\right)^2 \\ &= 18^2 = 18 \cdot 18 \\ &= 324 \end{aligned}$$

$$\begin{aligned} \left(\frac{1}{3}\right)^2 \cdot \left(\frac{1}{4}\right)^2 &= \left(\frac{1}{3 \cdot 4}\right)^2 \\ &= \left(\frac{1}{12}\right)^2 \\ &= \frac{1}{12} \cdot \frac{1}{12} \\ &= \boxed{\frac{1}{144}} \end{aligned}$$